South Carolina Legislative Audit Council

LAC

Report to the General Assembly

December 1994

Department of Health and Environmental Control's Implementation of the Safe Drinking Water Act

Legislative Audit Council

400 Gervais Street
Columbia, SC 29201
(803)253-7612
(803)253-7639 FAX

Authorized by §2-15-10 *et seq.* of the South Carolina Code of Laws, the Legislative Audit Council, created in 1975, reviews the operations of state agencies, investigates fiscal matters as required, and provides information to assist the General Assembly. Some audits are conducted at the request of groups of legislators who have questions about potential problems in state agencies or programs; other audits are performed as a result of statutory mandate.

The Legislative Audit Council is composed of three public members, one of whom must be a practicing certified or licensed public accountant, and six General Assembly members who serve ex officio.

Audits by the Legislative Audit Council conform to generally accepted government auditing standards as set forth by the Comptroller General of the United States.

Copies of all LAC audits are available to the public at no charge.

Department of Health and Environmental Control's Implementation of the Safe Drinking Water Act was conducted by the following audit team.

Audit Supervisor

Audit Manager
Jane I. Thesing

Legal Counsel
Jane McCue Johnson

Typography
Candice H. Pou
Maribeth Rollings Werts

Audit Team

Associate Auditor
Sara Schechter-Schoeman

LAC

December 1994

DHEC's Implementation of the Safe Drinking Water Act

Members of the General Assembly requested that we review the Department of Health and Environmental Control's (DHEC) implementation of the federal Safe Drinking Water Act (SDWA). The 1986 amendments to the SDWA imposed new requirements that increased the responsibilities of the federal and state governments and public water systems for providing safe drinking water. For example, the number of contaminants regulated under the act has expanded from 23 in 1986 to 84 in 1993.

In South Carolina, DHEC has primary responsibility for enforcing the act. We reviewed policy and administrative issues related to the Safe Drinking Water Act and its implementation in South Carolina.

Policy Issues

We reviewed several policy choices that South Carolina has made in implementing the SDWA. By subsidizing small and inefficient water systems, the state is not acting in the long-term interest of optimizing the use and management of its water resources.

- Although the SDWA assumes that individual water systems would conduct the required water monitoring, South Carolina has chosen a centralized approach. DHEC, rather than the water systems, collects and is responsible for analyzing the required water samples. We found no reason to disagree with this choice.

- South Carolina has a higher percentage of small water systems than average. On a national level, 87% of community water systems serve fewer than 3,301 customers. However, in South Carolina, 97.6% of all public water systems serve fewer than 3,301 customers.

- Although many of South Carolina's existing water systems may be too small and/or inefficient to comply with the long-term requirements of the SDWA, the state does not have an adequate policy to address this situation. The state's administrative and funding policy promotes the continued existence of non-viable water systems, which will increase total monitoring and enforcement costs.

- Water systems pay fees to offset the costs of the state's drinking water program. The fees proposed by DHEC and passed by the General Assembly contain subsidies for certain water systems. Subsidies in the fees promote continued inefficiency in South Carolina's water systems.

We obtained information from other states in the Environmental Protection Agency's southeastern region about how they administer and fund the Safe Drinking Water Act requirements. There is no consensus about how drinking water programs should be conducted. Some of the issues in which the states vary are source of funding, viability policy, responsibility for water monitoring, and the type of laboratory used.

▶

Administrative Issues

We reviewed DHEC's administration of the Safe Drinking Water Act program for FY 93-94, the phase-in year. Equipment could not be purchased or staff hired until sufficient fee revenues had been received in FY 93-94. Little water monitoring was completed in FY 93-94. There are some problems with administrative aspects of the program:

- DHEC has not developed cost comparisons adequate to determine the least-cost alternative for water monitoring. DHEC has not determined its unit costs for conducting water sampling and analysis; therefore, it cannot compare its costs to those of commercial labs as required by the FY 93-94 appropriation act.

- DHEC has not pursued enforcement action against many water systems with unpaid FY 93-94 fees. We could find no justification for further delay in issuing Notices of Violation (NOVs) to 137 of 156 water systems against which no action has been taken.

- DHEC did not correctly classify some water systems that should be public water systems under federal law. Instead, they were classified as state-defined systems. Also, DHEC is giving an unauthorized fee discount to owners of multiple migrant labor camps for FY 94-95. As a result, some water systems have not been assessed the appropriate fee and the program has lost revenue.

We found no material problems with DHEC's procurement of water monitoring contracts, contract management, or expenditures of drinking water fees.

Agency comments to the audit begin on page 35.

South Carolina Legislative Audit Council

LAC

Report to the General Assembly

Department of Health and Environmental Control's Implementation of the Safe Drinking Water Act

LAC/94-1

Contents

Appendices

Executive Summary

Members of the General Assembly requested that we review the Department of Health and Environmental Control's (DHEC) implementation of the federal Safe Drinking Water Act (SDWA). The 1986 amendments to the SDWA imposed new requirements that have increased the responsibilities of the federal and state governments and public water systems for providing safe drinking water. For example, the number of contaminants regulated under the act has expanded from 23 in 1986 to 84 in 1993. In South Carolina, DHEC has primary responsibility for enforcing the act. We reviewed policy and administrative issues relating to the Safe Drinking Water Act and its implementation in South Carolina.

Policy Issues

We reviewed several choices that South Carolina has made in implementing the SDWA. Our greatest concern is that by subsidizing small and inefficient water systems, the state is not acting in the long-term interest of optimizing the use and management of its water resources.

- Although the SDWA assumes that individual water systems would conduct the required water monitoring, South Carolina has chosen a centralized approach. DHEC, rather than the water systems, collects and is responsible for analyzing the required water samples. We found no reason to disagree with this choice (see p. 5).

- Although many of South Carolina's existing water systems may be too small and/or inefficient to comply with the long-term requirements of the SDWA, the state does not have an adequate policy to address this situation. The state's administrative and funding policy promotes the continued existence of non-viable water systems, which will increase total monitoring and enforcement costs (see p. 6).

- Water systems pay fees to offset the costs of the state's drinking water program. The fees proposed by DHEC and passed by the General Assembly contain subsidies for certain water systems. Subsidies in the fees promote continued inefficiency in South Carolina's water systems (see p. 9).

We obtained information from other states in the Environmental Protection Agency's southeastern region about how they administer and fund the Safe Drinking Water Act requirements. We found there is no consensus about how drinking water programs should be administered. The states vary in

their approaches to source of funding, viability policy, responsibility for water monitoring, and the type of laboratory used (see p. 14).

Administrative Issues

We reviewed DHEC's administration of the Safe Drinking Water Act program for FY 93-94, the phase-in year. Equipment could not be purchased or staff hired until sufficient fee revenues had been received in FY 93-94. Little monitoring was completed in FY 93-94. We identified some problems with administrative aspects of the program:

- DHEC has not developed cost comparisons adequate to determine the least-cost alternative for water monitoring. DHEC has not determined its unit costs for conducting water sampling and analysis; therefore, it cannot compare its costs to those of commercial labs as required by the FY 93-94 appropriation act (see p. 19).

- DHEC has not pursued enforcement action against many water systems with unpaid FY 93-94 fees. We could find no justification for further delay in issuing Notices of Violation (NOVs) to 136 of 156 water systems against which no action has been taken (see p. 22).

- We identified water systems that should have been classified as public water systems that DHEC misclassified (see p. 24). Also, DHEC is giving an unauthorized fee discount to owners of multiple migrant labor camps for FY 94-95 (see p. 25). As a result, some water systems have not been assessed the appropriate fee and the program has lost revenue.

We found no material problems with DHEC's procurement of water monitoring contracts, contract management, or expenditures of drinking water fees (see pp. 21, 25).

Introduction and Background

Audit Objectives, Scope and Methodology

Members of the General Assembly requested that the Legislative Audit Council review the Department of Health and Environmental Control's (DHEC) implementation of the federal Safe Drinking Water Act (SDWA). Specifically, we were asked to determine whether DHEC had complied with an appropriation act proviso requiring it to consider the least-cost alternative for the monitoring and laboratory tests required under the SDWA. We conducted survey fieldwork at DHEC and consulted with the audit requestors to clarify the issues and define specific objectives. The resulting audit objectives include policy and administrative issues relating to South Carolina's implementation of federal drinking water mandates.

Our review was limited to DHEC's implementation of the safe drinking water act program and did not address other water-related programs administered by the department. The primary period of review was FY 93-94. (For further discussion of the audit scope and methodology, see Appendix A.) This audit was conducted in accordance with generally accepted government auditing standards.

Our specific objectives (with references to discussion of our findings) were as follows:

Policy Issues

- Review DHEC's choices made in interpreting the requirements of the Safe Drinking Water Act and in assuming responsibility for monitoring rather than assigning responsibility to local water authorities (see p. 5).

- Review southeastern states' perspectives and approaches to implementation of SDWA requirements (see p. 14).

Administrative Issues

- Review DHEC's cost assessments and decision-making process in deciding who (DHEC or private contractors) would conduct the required water testing (see p. 19).

- Review DHEC's administration of the Safe Drinking Water Act program (see p. 22).

Background—The Safe Drinking Water Act

The Safe Drinking Water Act (SDWA) of 1974 established a national program to ensure that public water systems meet minimum standards for protecting human health. The act required the Environmental Protection Agency (EPA) to establish:

- National drinking water standards or treatment techniques for contaminants that could adversely affect human health.
- Requirements for monitoring the quality of drinking water and for ensuring the proper operation and maintenance of water systems.

By the mid-1980s, many drinking water contaminants remained unregulated by the EPA. Water systems' compliance with the requirements and states' enforcement actions were inconsistent. Congress amended the Safe Drinking Water Act in 1986 to impose new and more stringent requirements. The amendments significantly increased the responsibilities of the federal and state governments and the public water systems for providing safe drinking water. The number of contaminants regulated under the act expanded from 23 in 1986 to 84 in 1993, and the total is expected to reach 111 by 1995.

Primacy

South Carolina, along with all other states except Wyoming, has been granted primacy over its drinking water program. This means that the state, rather than the EPA, has primary responsibility for enforcing the act. The Department of Health and Environmental Control is South Carolina's primacy agency. In order to obtain primacy, a state must adopt drinking water standards no less stringent than the national standards, have an adequate means of enforcing these standards, and comply with federal record-keeping and reporting requirements. The EPA also requires that a state maintain an inventory of public water systems, conduct inspections of water systems, and establish a program for certifying commercial labs.

In a state without primacy, the EPA would administer the drinking water program. Both DHEC and the U.S. General Accounting Office (GAO) indicate that this would not be desirable. The GAO states that "such an approach would be significantly less effective in protecting the public . . . and would impose substantially greater costs upon water systems." Furthermore, an EPA-administered program would not have the flexibility of a state-run program.

Public Water Systems

The SDWA requires that public water systems monitor their water for the regulated contaminants. A public water system is defined as one that has 15 or more taps or serves an average of 25 people at least 60 days a year. We refer to these water systems as federally-defined systems. Public water systems do not have to be "public" entities. They can be private businesses, such as mobile home parks or convenience stores, that supply water as defined above.

South Carolina defines (§44-55-20(g)) a public water system as anything larger than a well serving a single private residence or dwelling. We refer to water systems that meet this definition but are smaller than those defined by federal law as "state-defined" or state water systems.

DHEC staff in three bureaus of the Office of Environmental Quality Control (EQC) have responsibility for implementation of the SDWA. The program is funded by state appropriations, a federal grant, and fees assessed against the more than 2,600 drinking water systems in the state (see p. 9).

Policy Issues

South Carolina's Policy Choices

We reviewed several choices that South Carolina made in implementing the requirements of the Safe Drinking Water Act (SDWA). The choices we address in this section include:

- Adopting centralized responsibility for water monitoring.
- Not requiring that water systems ensure viability.
- Enacting a fee schedule that water systems pay.
- Regulating water systems smaller than those covered by the federal SDWA.

We discuss each of these choices and their implications. Our greatest concern is that by subsidizing small and inefficient water systems, the state is not acting in the long-term interest of optimizing the use and management of its water resources.

Centralized Monitoring

The SDWA assumes that individual water systems would conduct the required monitoring for more than 80 chemical contaminants. However, three of the EPA Region IV (southeastern) states, including South Carolina, have chosen a centralized monitoring approach. With this approach DHEC, rather than the water systems, collects and is responsible for analyzing the required water samples. We found no reason to disagree with this choice. DHEC officials stated that several factors were involved in its choice of centralized implementation.

Historic Approach to Water Monitoring

Administration of the federal SDWA was superimposed on South Carolina's existing program for monitoring drinking water. Prior to the Safe Drinking Water Act, DHEC employees collected samples and ran the analyses for monthly bacteriological and annual chemical monitoring of all public water systems in the state. According to DHEC officials, the SDWA program is a natural continuation and expansion of DHEC's prior drinking water programs.

Ability of Small Systems to Meet Technical Requirements

DHEC officials mentioned that they feared small water systems would have technical problems if they were responsible for their own water sampling, analysis, and data reporting. DHEC's concern about the ability of small water systems to comply with the requirements of the SDWA is shared by the General Accounting Office (GAO). A GAO official testifying before a Congressional committee stated:

> Although compliance with the new drinking water requirements is expected to affect water systems of all sizes, small systems [3,300 or fewer customers], which already account for more than 90 percent of the current drinking water violations, will have greater difficulties because they lack the necessary financial and technical resources.

Support From Water Systems

Documentation collected by DHEC when it first considered how to implement the 1986 SDWA amendments shows that many water systems and associations supported continuing DHEC's "historical monitoring program rather than shifting responsibility for monitoring to the water suppliers."

Inability of Small Systems to Pay for Monitoring

DHEC officials expressed concern over the ability of small water systems to pay for the required monitoring. They also indicated that small systems might not comply with the SDWA if they had to bear the entire cost.

Viability of Water Systems

Although many of South Carolina's existing water systems may be too small and/or inefficient to comply with the long-term requirements of the Safe Drinking Water Act, the state does not have an adequate viability program to address this situation. Viability is the technical, managerial, and financial ability to remain in long-term compliance with the federal drinking water regulations.

Section 44-55-120(D) of the South Carolina Code of Laws authorizes DHEC to deny construction permits to new systems which cannot demonstrate viability, or that feasibly can connect to existing viable water systems. DHEC is now drafting viability regulations for new water systems. To

demonstrate viability, each proposed water system would be required to submit technical information about its system; financial information including customer rates, operating budget, and cash reserves; and management information including record-keeping and bill collection procedures.

Section 44-55-120(D) also allows DHEC to revoke annual operating permits of existing systems that cannot maintain viability. However, DHEC does not issue annual operating permits. According to DHEC officials, the law would need to be changed to authorize viability standards for existing water systems.

The lack of a strong viability program is of particular concern because South Carolina has a higher percentage of small water systems than the national average. On a national level, 87% of community water systems serve fewer than 3,301 customers. However, in South Carolina, 97.6% of all public water systems, and 96% of federally-defined water systems serve fewer than 3,301 customers.

Administrative and funding choices have promoted continued existence of non-viable water systems. The result is increased total program costs.

Between July 1993 and February 1994, 173 new systems were added to DHEC's inventory. Just one of these new systems has more than 50 taps (customers). For FY 94-95, South Carolina had 2,697 public water systems. Of these, 1,040 are state-defined public water systems which serve fewer than 15 taps and 25 individuals. Only 163 South Carolina water systems serve more than 1,000 customers, and only 64 of these serve more than 3,300 customers.

The Strom Thurmond Institute at Clemson University has studied the financial and policy implications of South Carolina's approach to water systems. It concluded in a 1989 report that the great number of very small water systems in the state is financially inefficient. The report stated:

> But if [South Carolina's] current fragmented organization, with very many small local supply systems is to be maintained, water bills would either have to increase dramatically or the smaller systems will have to be heavily subsidized by federal or state tax revenues . . . . The alternative to larger subsidies is to take advantage of the economies of scale in water supply by adopting a policy of vigorously promoting regional arrangements for water supply.

However, the administrative and funding choices made by the state have promoted the continued existence of very small water systems. In 1993 the GAO estimated the actual cost of quarterly monitoring at between $2,500 and $10,000 for each set of analyses. In South Carolina, the impact on small

water systems is softened because of cost-shifting in the fee schedule. For example, for FY 93-94 DHEC billed the Heater/Milmont system with 2 water sources and 18 customers only $800 (see Table 2.2). The monitoring alone might have cost this system $20,000 if it had to contract with a commercial lab.

South Carolina's lack of an adequate viability program, coupled with the existence of a state-wide fee schedule that subsidizes systems with 100 or fewer customers, promotes the continued existence of non-viable systems. The result is increased total program costs. The more sources requiring monitoring, and the more systems requiring technical assistance, the greater the total monitoring cost to the state.

In addition, enforcement costs will rise because increasing violations are expected as the SDWA is fully implemented. According to the GAO:

> . . . EPA and the states have increasingly recognized that the heart of the noncompliance problem lies in the sheer volume of small systems that are nonviable as presently structured and have little chance of ever achieving compliance with the increasing number of drinking water regulations.

If South Carolina were to promote consolidation of water systems into larger and more efficient regional systems, the prospects for economic development would be enhanced. This would be particularly true in rural areas now served by a multitude of low-capacity systems. Other benefits would also result, according to the GAO. Economies of scale could result in improved water quality and lower water costs to the consumer. The state could save resources due to better compliance and a reduction in the oversight workload.

Recommendations

1. DHEC should develop a strong viability program for both existing and proposed water systems, and should aggressively promote water system consolidation.

2. DHEC should promulgate regulations to ensure the viability of new water systems.

3. The General Assembly may wish to consider granting DHEC statutory authority to require the viability of existing water systems.

Table 2.1: FY 93-94 Drinking Water Program Expenditures By Source of Funds

Source of Funds	Amount
Fees From Water Systems	$1,799,616[a]
Federal Grant	$723,213
State Appropriation	$665,669
Total	$3,188,498

a As of August 29, 1994, $3,804,164 in FY 93-94 fees had been collected, but only $1,799,616 of this was spent during FY 93-94.

Fee Schedule

The General Assembly has established fees that water systems pay to offset the costs of the state's drinking water program. South Carolina's program is funded from three sources, as shown in Table 2.1.

In this section we review the impact of various fee options for funding the monitoring requirements of the SDWA. The fees proposed by DHEC and passed by the General Assembly contain subsidies both for small water systems and for systems with large numbers of sources. Fee subsidies promote continued inefficiency in South Carolina's water systems.

The SDWA requires that water systems' distribution lines (pipes that deliver water to customers) and water sources be monitored for chemical and biological contamination. The number of water sources is not necessarily related to the number of customers a system serves. For example, the town of Monetta with 297 customers has 8 sources. On the other hand, the largest municipal systems in the state have no more than three water sources each. The cost of source monitoring is dependent on the number of sources, not the number of customers. Therefore, any fee based on the number of customers contains a subsidy for small systems with many sources.

DHEC officials stated that safe drinking water is a state-wide issue and costs should be borne equally by each customer in the state. In 1992, DHEC analyzed the effect of a flat monthly fee of 50¢ per service connection. If this had been adopted, it would have resulted in Columbia paying $254,475

per source for DHEC monitoring and technical assistance. Gentry Poultry would have paid only 43¢ per source.

A modification of the 50¢ per tap per month fee was proposed to the General Assembly, but was not adopted. In its place, the fee schedule for FY 93-94 was adopted as an appropriation act proviso. In this schedule, the annual fees per water system ranged between $150 and $40,000, depending on number of service connections or taps. The fee assessments did not vary with number or type of water sources.

This fee schedule was considered inequitable by water systems. One reason was the large variances in fees for systems with similar numbers of taps. For example, the Montmorenci Water District with 984 taps was assessed $8,000, while Timmonsville with 1,073 taps was assessed $15,000.

The General Assembly established an advisory committee consisting of representatives of various sized water systems, DHEC, and the Department of Consumer Affairs. In late 1993, the committee worked to revise the fee schedule for FY 94-95. The objectives of this revision were to smooth out the breaks between categories, address the concerns of systems which bought all their water from another system, and make the fee schedule more equitable. This revised schedule was passed as an appropriation act proviso. Table 2.2 compares the fees for selected water systems under a 50¢ per tap per month assessment, the FY 93-94 fee schedule, and the FY 94-95 fee schedule.

Subsidies in FY 94-95 Fee Schedule

The FY 94-95 fee schedule contains charges for program administration, distribution monitoring, and source monitoring. The source monitoring charges contain subsidies for very small water systems and for water systems with a large number of sources.

Cap on Source Monitoring Fees

One subsidy is the $5,000 annual cap on source monitoring. Although all water sources are monitored, a system with 27 sources to monitor will pay the same as a system with only 5 sources. Without this cap, 33 water systems would pay an additional $120,000 to the state. For example, the Cassatt Water Company with 16 sources, and the Carolina Water/I-20 system with 27 water sources each pay only $5,000 for source monitoring (see Table 2.4).

Table 2.2: Illustration of Drinking Water Fees and Fee Proposal for Selected Water Systems

Water System	No. of Taps	No. of Sources[a]		Assessment of 50¢/tap/month[b]	Actual Total Fees	
		GW	SW		FY 93-94[c]	FY 94-95[d]
Gentry Poultry	1	14	0	$6	$500	$3,687
Christopher Lane Est.	8	2	0	$48	$500	$771
DuPont DeNemours	11	9	1	$66	$500	$3,053
L&R Trailer Pk.	16	2	0	$96	$800	$843
Percival Estates MHP	17	1	0	$102	$800	$601
Heater/Milmont	18	2	0	$108	$800	$859
Crickentree	21	3	0	$126	$800	$1,133
CWS/Indian Fork	98	6	0	$588	$1,500	$3,205
Monetta	297	8	0	$1,782	$4,000	$6,770
CWS/I-20	1,574	27	0	$9,444	$15,000	$11,538
Breezy Hill	3,737	11	0	$22,422	$15,000	$14,999
Cassatt Water Co.	6,357	16	0	$38,142	$18,000	$18,648
Florence	21,531	17	0	$129,186	$20,000	$31,882
Spartanburg	39,375	0	1	$236,250	$30,000	$33,863
Columbia	84,825	0	2	$508,950	$40,000	$43,743
Greenville	105,461	0	3	$632,766	$40,000	$47,839

a GW=ground water; SW=surface water.
b Example of fees using one method considered by DHEC.
c See Appendix B for FY 93-94 fee; fee based solely on number of service connections (taps).
d See Appendix C for FY 94-95 fee; fee based on number of taps and number of water sources.

Graduated Fee Schedule

Of greater monetary significance is the source monitoring subsidy provided to systems with fewer than 100 taps. According to DHEC, the amount of source monitoring provided does not vary according to the number of taps in a system. However, the fee for source monitoring varies as follows.

Table 2.3: FY 94-95 Source Monitoring Fees

Number of Taps	Fee Per GW Source[a]	Fee For SW Source[b]
1 - 25	$250	$500
26 - 100	$400	$800
101 - 100,000+	$1,000	$2,000

a GW=ground water; SW=surface water.
b Because they are more vulnerable to contamination, surface water sources (rivers and lakes) are subject to more extensive monitoring than are ground water sources (wells).

The intent of the SDWA Advisory Committee in designing the graduated fee scale for source monitoring was to subsidize some water systems with fewer than 100 customers, at the expense of other water systems with more than 100 customers. According to DHEC, the committee tried to avoid setting fees above what they believed the very small systems could afford to pay. This decision has implications for the long-term efficiency of South Carolina's water systems (see p. 6).

If these subsidies were removed, and systems paid a flat fee for every source monitored, each water system would pay only $550 per source for ground water monitoring, and $1,100 per source for surface water monitoring. This fee would be directly related to the monitoring conducted, and would be revenue-neutral in impact. Table 2.4 compares, for selected water systems, the source monitoring part of the FY 94-95 fee schedule with a hypothetical flat fee per source.

Recommendation

4. The General Assembly may wish to consider revising the fee schedule to eliminate the cap on source monitoring charges and to develop a source monitoring fee based on the number of water sources rather than the number of taps, which would better reflect the extent of monitoring required.

Table 2.4: Comparison of FY 94-95 Source Monitoring Fee With Flat Rate Source Monitoring Fee For Selected Water Systems

Water System	No. of Taps	No. of Sources[a]		FY 94-95 Source Fee[b]	Flat Rate Fee[c]
		GW	SW		
Percival Estates MHP	17	1	0	$250	$550
Spartanburg	39,375	0	1	$2,000	$1,100
Christopher Lane Est.	8	2	0	$500	$1,100
Crickentree	21	3	0	$750	$1,650
Greenville	105,461	0	3	$5,000	$3,300
CWS/Indian Fork	98	6	0	$2,400	$3,300
DuPont DeNemours	11	9	1	$2,750	$6,050
Gentry Poultry	1	14	0	$3,500	$7,700
Cassatt Water Co.	6,357	16	0	$5,000	$8,800
CWS/I-20	1,574	27	0	$5,000	$14,850

a GW = ground water; SW = surface water.
b See Appendix C for FY 94-95 fee. Comparison excludes administrative and distribution monitoring charges.
c Revenue-neutral flat rate proposal of $550 per GW source and $1,100 per SW Source; removes subsidy on systems with fewer than 100 taps, and eliminates $5,000 cap on source monitoring.

Regulation of Very Small Systems

The requirements of the federal Safe Drinking Water Act apply only to water systems which have 15 or more service connections, or regularly serve at least 25 individuals for at least 60 days a year. However, South Carolina, like Florida and Kentucky, has chosen to perform some routine monitoring for water systems smaller than the federal threshold. We found no reason to disagree with this policy.

South Carolina defines (§44-55-20(g)) a public water system as anything larger than a well serving a single private residence or dwelling. These state-defined systems are included in the fee schedule at flat rates of $100 and $150. They are subject only to quarterly bacterial coliform monitoring.

Although DHEC has not quantified the total cost of monitoring state-defined systems (the lab costs are approximately $14 for each quarterly analysis), there is no intent to subsidize these systems. Bacteriological monitoring provides a public health benefit that the customers of these systems would otherwise not receive.

Other States' Drinking Water Programs

As part of our review of South Carolina's choices in implementing the Safe Drinking Water Act, we obtained information from other states about how they administer and fund the act's requirements. The objectives were to present comparative information and also to determine if the southeastern states have reached a consensus on the best way to implement the act.

We limited our review to the Environmental Protection Agency (EPA) Region IV states which, in addition to South Carolina, include Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, and Tennessee. The programs reveal a wide range of administrative structures and funding sources. As shown in Table 2.5, there is no consensus on how drinking water programs should be conducted. The states vary in their approaches to funding, viability, responsibility for monitoring, and the type of laboratory used.

Half of the states have enacted fees paid by the water systems. These states tend to share certain characteristics. In three of these four states, the monitoring programs are centralized in the state's primacy agency. Monitoring of contaminants is more likely to be done in a state lab. States with a fee schedule are also less likely to have aggressively pursued viability. On the other hand, in the four states without a fee schedule, water systems are responsible for self-monitoring. They rely primarily on commercial labs (or certified in-house labs in the case of some very large systems) for their contaminant monitoring.

The states, the GAO, and the EPA perceive certain benefits and limitations to these approaches. However, because of the small number of states in our sample, and the lack of data, we could not quantify this information.

Table 2.5: Structure of Water Monitoring Programs

State	Public Water Systems[a]	Water System Fees	Viability Standards	Responsibility for Monitoring	Primary Laboratory Used[c]
Alabama	950	No	Yes	Water System	Commercial
Florida	7,200[b]	No	No	Water System	Commercial
Georgia	2,856	Yes	No	State	State
Kentucky	900[b]	No	Yes de facto	Water System	Commercial[d]
Mississippi	1,624	Yes	No	State	State
North Carolina	3,650	No	No	Water System	Commercial
South Carolina	1,657[b]	Yes	No	State	State and Commercial[e]
Tennessee	1,390	Yes	No	Water System	Commercial

a Some numbers are approximate.
b Additional small water systems are subject to some monitoring.
c In some states, water systems' in-house labs may do some monitoring.
d One-time baseline measurements for a new rule are often done by the state lab.
e Some contaminants are monitored by the state lab. Others are monitored by commercial labs awarded contracts by the state.

Source: Drinking water officials in Region IV states.

Funding

All the states are concerned about program funding. The federal government is authorized to fund up to 75% of the costs of administering the drinking water programs in states that have primacy. However, actual federal contributions have been approximately 35%.

In addition, program costs have increased dramatically with the implementation of additional regulations. EPA and state officials mentioned that inadequate funding jeopardized the ability of some states to meet federal mandates.

Four of the southeastern states collect fees from water systems to support the requirements of their drinking water programs. Two more states, Florida and Kentucky, have tried unsuccessfully to enact fees.

Although the federal government is authorized to fund up to 75% of state drinking water program costs, actual federal funding has been approximately 35%.

Although drinking water fees are considered desirable by state officials, they have certain implications. Every state with a fee schedule subsidizes its smallest systems. The GAO has recognized that sometimes, "providing technical and financial assistance can actually discourage small systems from seeking long-term solutions to their compliance problems." There is little incentive for consolidation if the state fee is inconsequential compared to the true cost of monitoring. These subsidies help keep non-viable systems in business, thereby raising total costs (see p. 6 for discussion of viability in South Carolina).

Viability

An issue mentioned frequently by Region IV program officials is viability. Viability is the only factor we looked at that is associated with the number of public water systems in a state. Alabama and Kentucky, the only two states in Region IV with fewer than 1,000 public water systems, are the two states that have aggressively pursued viability issues.

This issue is particularly significant because, nationally, 90% of the community water systems in violation of the SDWA were systems serving 3,300 or fewer customers. Officials in Georgia, Florida, Mississippi, and North Carolina stated they have been unable to enact viability standards. The GAO also has recognized that it is difficult for states to mandate that small water systems either consolidate or go out of business.

Nonetheless, some states have been able to achieve greater viability of systems, sometimes even without an explicit program. Greater viability can result from either a strong program coupled with speedy enforcement actions, as in Alabama, or by lack of a fee schedule that subsidizes nonviable, small water systems.

In Kentucky, many of the small water systems that had difficulty paying the fees charged by commercial labs have merged with other systems, reducing the number of public water systems by several hundred. The cost of commercial lab monitoring combined with aggressive enforcement by the state has functioned as a de facto viability standard. In Tennessee, the costs of state fees (for services other than monitoring) coupled with commercial lab

monitoring charges have pushed systems to consolidate. The number of community water systems has dropped from about 850 to 540.

Centralized or Decentralized Administrative Structure

As shown in Table 2.5, three states including South Carolina, have centralized programs where the state has responsibility for water monitoring. Five of the Region IV states have decentralized monitoring responsibilities, and individual water systems make their own monitoring arrangements. This is usually done by entering into contracts with commercial laboratories.

A centralized drinking water program may result in higher compliance rates and better quality control.

The Bureau Chief of the EPA Region IV Drinking Water Program described advantages he perceives from a centralized program. They include greater reliability of centralized analytic work, more hands-on technical assistance provided to water systems, higher compliance rates, and better quality control of the program. Although many of these perceptions were also expressed by the states surveyed, we could not quantify them.

On the other hand, several program directors pointed out that a decentralized state's administrative effort in scheduling, paperwork processing, and fee collection is less. North Carolina's program director said that self-monitoring is administratively very simple, because the state does not have to negotiate the contracts, process the bills, or collect the fees.

Florida's program director said that funding problems in a decentralized state belong to the water systems rather than to the state. However, this view may be controversial from a public health perspective if water quality deteriorates because of lack of funds to conduct monitoring or to correct violations.

Use of State or Commercial Labs

Table 2.5 shows that decentralized states tend to use commercial labs, while centralized states tend to use state labs for the required SDWA monitoring. Expanded SDWA monitoring is in its first three-year cycle. Many labs in both the private and public sector are just becoming certified for analyzing the more complex contaminants. In addition, both the availability of certified commercial labs, and the rates those labs charge vary widely. Because of these factors, we could not reach conclusions about the cost and reliability of state labs compared to commercial labs.

An EPA official indicated that state collection of samples and centralization of the analytic work yields greater reliability and higher compliance. Not

surprisingly, this belief is widely shared by the southeastern states' drinking water officials. However, we do not have the data to either confirm or deny this perception.

Many states believe, based primarily on economies of scale, that state labs are less expensive than private labs. We found some evidence to support this. In Georgia, where water systems can choose which lab conducts their monitoring, all but a few water systems have selected monitoring by the state lab rather than by commercial labs. Four of the eight states believe that state labs can do the monitoring at a lower cost than private labs. However, none of the states has fully quantified this perception (see p. 19 for discussion of lab costs in South Carolina).

Violations

One potential way to gauge the effectiveness of different approaches to the SDWA is to compare rates of violation of the drinking water regulations. However, the limited data we reviewed shows no correlation between compliance with the SDWA and program structure.

The Region IV states vary widely in the number of significant violations of the Safe Drinking Water Act. Two of the three states with the highest number of violations are self-monitoring states. However, so are two of the three states with the lowest number. According to the EPA's 1993 data, rates of significant violations of the SDWA vary from none (for Alabama and Georgia) to a ratio of 1 in 110 water systems for South Carolina and 1 in 96 for North Carolina.

Despite this data, EPA officials said that states with centralized monitoring have higher rates of compliance than do self-monitoring states, although this may not be reflected in the 1993 compliance data. According to these officials, South Carolina, with the implementation of its fee schedule, has made significant progress since the 1993 EPA data.

Clearer patterns in violations may emerge as the SDWA requirements are fully implemented, and are phased in for smaller systems. North Carolina's program director said his state's water systems, which are self-monitoring, are having increasing difficulty paying lab costs for monitoring more contaminants. He expects higher levels of water system non-compliance starting in 1995 when systems with fewer than 100 taps are required to begin testing.

Administrative Issues

Water Monitoring

The monitoring program required by the 1986 SDWA amendments started in South Carolina in January 1993. However, equipment could not be purchased or staff hired until sufficient fee revenues had been received in FY 93-94 (see p. 9 for history of drinking water fees). Little monitoring was completed in FY 93-94. DHEC had problems with the major commercial lab contract for lead and copper monitoring, as discussed below. Contracts for monitoring other contaminants did not become effective until July 1994.

DHEC reports that its own lab completed the following analyses in FY 93-94:

Table 3.1: DHEC Laboratory Analyses– FY 93-94

Contaminant	Number of Samples
Nitrates	931
Nitrites	594
Volatile Organic Chemicals	1,947

Source: Department of Health and Environmental Control.

We found that DHEC did not use cost comparisons to decide whether to contract with commercial labs for the monitoring, or use the state lab.

Monitoring Cost Analysis

DHEC has not developed cost comparisons adequate to determine the least-cost alternative for water monitoring. Section 31.26 of the FY 93-94 appropriation act required that in providing monitoring and laboratory analytical services mandated by the Safe Drinking Water Act, DHEC consider:

> . . . least cost alternatives including contracting with private laboratories where appropriate. DHEC shall include all applicable direct and indirect costs in developing cost comparisons with private laboratories.

DHEC officials and documents prepared by the department indicate that the least-cost option for conducting the water monitoring tests is using DHEC's lab. However, we found that DHEC has not developed cost comparisons adequate to support this conclusion, or to meet the requirements of the law.

DHEC has made some efforts to obtain its own cost information and prices from commercial labs. However, in reviewing this data, we could not determine that DHEC's monitoring costs are lower. Prices DHEC obtained from one commercial lab are *unit costs* for particular contaminant(s) or testing methods. In contrast, DHEC's own cost estimates and budget projections are total *program costs*. Because DHEC has not determined its unit costs, there is no way of knowing whether, for example, the laboratory analysis for detecting pesticides in water could be conducted for lower cost by DHEC or a commercial lab.

Because DHEC has not determined its unit costs, there is no way of knowing whether specific tests could be done for lower cost by DHEC or a commercial lab.

DHEC considered various strategies for meeting the monitoring requirements of the Safe Drinking Water Act. They included DHEC's lab analyzing 30% of each contaminant, and DHEC's lab conducting a steady volume of monitoring but contracting with commercial labs for the peak volumes of testing. During FY 93-94, DHEC entered into contracts with commercial labs for much of the monitoring required during the initial three-year compliance cycle. However, this decision was based primarily on the short time left to complete the monitoring.

None of the options considered or actions taken was based on an accurate comparison of DHEC costs with commercial lab charges, as required by the appropriation act. A DHEC program official stated that he thought DHEC had met the *intent* of the law by selecting an approach to monitoring which resulted in commercial labs receiving some contracts.

DHEC officials indicated that several factors influenced their water monitoring choices. Cost was not the primary determinant. In addition to the short time for completion of the first round of monitoring, DHEC also considered the scarcity of certified in-state labs, fluctuations in the volume of samples to be analyzed, and a desire to maintain the DHEC lab as a primacy lab certified to test a wide range of contaminants. While these considerations may be appropriate, a strategy based on these factors does not fulfill the requirements of the appropriation act.

Good cost information is needed for DHEC to compare its own costs with those of commercial labs. Cost data should be developed for all the monitoring steps. This includes laboratory costs, sample collection costs incurred by the bureau of district services, and agency overhead or indirect costs. DHEC's Division of Cost Accounting and Reports is available to assist program areas in developing unit costs.

Based on DHEC's limited cost data, we could not determine whether using DHEC's lab for all monitoring, contracting with commercial labs, or a combination, would provide the least-cost alternative for monitoring and laboratory analytic services. A comparison must be made in FY 94-95 because §30.23 of the FY 94-95 appropriation act also requires the department to consider the least-cost alternative.

Recommendation

5. In order to comply with §30.23 of the FY 94-95 appropriation act, DHEC should determine its unit costs for water monitoring by contaminant(s) and by testing method. DHEC should compare these costs with commercial lab charges.

Lead and Copper Contract

As stated above, DHEC had problems with its contract with a commercial lab to conduct lead and copper monitoring in four of the five regions in the state. Due to problems with the vendor's performance, many of the test results could not be accepted.

We reviewed DHEC's procurement process for the lead and copper contract and found no material problems. We also reviewed DHEC's contract management and found the department took appropriate action to deal with the unsatisfactory performance of the vendor. The vendor repeated the monitoring at no charge, and DHEC withheld all payment until test results were validated. (As of August 1994, DHEC had not paid the vendor for any services.)

Fee Administration

We also reviewed DHEC's administration of the fees assessed to water systems. We examined the procedures for fee assessment and collection and for enforcement actions taken against systems which did not pay. We found that DHEC has not taken adequate enforcement actions, as discussed below. We also identified problems in fee assessment that resulted or will result in a loss of revenue for the department (see p. 24).

Enforcement of Fees

DHEC has not pursued enforcement action against many water systems with unpaid FY 93-94 fees. Water systems' accounts are past due 30 days after they are billed. At the end of August 1994, a total of 255 water systems still owed DHEC approximately $267,666 in FY 93-94 fees. DHEC's enforcement strategy states that DHEC will notify the delinquent water systems of their payment deadlines and:

> If this deadline is not met, enforcement action will be pursued . . . . [T]he first enforcement action will be to send a Notice of Violation [NOV] to the system.

DHEC has not started enforcement procedures for 156 water systems with unpaid balances.

Ninety-nine of the 255 delinquent accounts had been referred for enforcement by September 1994. However, enforcement procedures had not been started for 156 other systems with unpaid balances. This includes four systems that have paid nothing, while owing $15,000 each.

We could find no justification for further delaying enforcement proceedings against 136 of the 156 systems. They include the following situations:

- Water systems that received their first bill in February 1994, rather than July 1993 (47 systems).
- Water systems that had made some payment, but no payment since June 1994 (50 systems).
- Water systems that had not reached agreement with DHEC about their bills (14 systems).
- Water systems for which no reason could be determined (25 systems).

One factor impeding timely referrals to enforcement is that DHEC staff do not have adequate information to determine the status of delinquent accounts.

For example, DHEC's automated accounting system cannot distinguish between a water system with an unpaid balance because it is paying on a negotiated schedule, and another one that merely stopped paying. To differentiate them, DHEC staff must manually compile information from more than one computer database, and from several offices within the agency.

Issuance of Administrative Orders

DHEC's written enforcement strategy states that administrative orders will normally be issued against water systems that fail to respond to NOVs. The orders may include monetary penalties of up to the fee amount. However, as of October 3, 1994, no administrative orders for failure to pay drinking water fees had been issued.

It is unclear what further action DHEC will take against systems that have not responded to NOVs. DHEC can stop monitoring the water of federally-defined systems that have not paid. Water customers and the EPA would be notified that a monitoring violation has occurred. However, this sanction is not available for state-defined systems, because the SDWA does not require that they be monitored.

DHEC officials also stated that they do not know if it will be cost-effective to seek enforcement against systems that owe little money. The department might consider the use of a collection agency as an alternative to administrative orders for systems with small balances. If all systems are not subject to consistent fee collection and enforcement efforts, it is unfair to the majority of systems that have paid.

Enforcement Policy

DHEC has not properly established its policy for enforcement of drinking water fees. DHEC's written "enforcement strategy," which includes monetary penalties, is in the form of undated internal guidelines, developed by the Bureau of Drinking Water Protection, rather than a regulation or formal agency policy.

Recommendations

6. DHEC should take timely enforcement action against water systems that have not paid their FY 93-94 fees in full. The department may wish to explore the use of collection agencies if administrative orders prove too costly.

7. DHEC should improve its information systems so that staff have timely access to complete information about the status of water systems' accounts.

8. DHEC should review its enforcement strategy for non-payment of drinking water fees, and determine whether this procedure should be promulgated as a regulation pursuant to the Administrative Procedures Act or as a formal DHEC policy.

Classification of Water Systems

We identified water systems that should be public water systems under federal law, but were not classified correctly by DHEC. As a result, they were not billed the correct fee. These systems had at least 15 taps or served a population of greater than 25 individuals, but had been classified as state rather than federally-defined systems. Of the 29 systems we questioned, DHEC found that 15 were wrongly classified. According to the fee schedule, state-defined systems pay either $100 or $150 annually, but federally-defined systems with a water source pay at least $250. The revenue loss from the 15 misclassified systems is $1,600.

DHEC reclassified these 15 systems during the course of this audit. However, according to a DHEC official, the department does not plan to rebill them at the correct rate for FY 94-95.

Recommendation

9. DHEC should review the inventory of water systems and reclassify and rebill any water systems that have been misclassified.

Discount for Multiple Labor Camps

For FY 94-95, DHEC has granted a discount in the water system fee to owners of multiple migrant labor camps in the state-defined water system category. There is no provision for this discount in the FY 94-95 fee schedule, and we could find no legal authorization for it. Other owners of multiple water systems, such as mobile home parks, do not receive the discount. This discount affects 59 systems and accounts for $2,950 in lost revenue.

Recommendation

10. DHEC should eliminate the drinking water fee discount for owners of multiple migrant labor camps.

Expenditures From Drinking Water Fees

We also reviewed FY 93-94 expenditures from the drinking water fees to determine whether the fees were spent on the drinking water program instead of other DHEC programs. According to §39.26 of the FY 93-94 appropriation act, the fees must be used "for the purposes of implementing the Safe Drinking Water Act regulatory program." We found no material problems with DHEC's expenditure of drinking water fees.

Appendices

Audit Scope and Methodology

Our review was limited to DHEC's implementation of the federal Safe Drinking Water Act. Staff in three bureaus of the office of Environmental Quality Control (Drinking Water Protection, EQC Laboratories, and District Services) are involved in implementing the program. The audit did not address other programs administered by DHEC. The primary period of review was FY 93-94. However, we also reviewed planning completed prior to FY 93-94 and planning projections for FY 94-95 and beyond.

We reviewed DHEC's reports about the drinking water program and administrative records for program planning, budgeting and enforcement. We also examined DHEC's accounting records for revenues and expenditures from drinking water fees and procurement records for contracting. We reviewed information from the Safe Drinking Water Act Advisory Council, the Comptroller General's Office and the Budget and Control Board Division of General Services. We also reviewed reports about drinking water issues from the United States General Accounting Office (GAO).

We conducted interviews with DHEC staff and officials with other South Carolina state agencies, local water authorities, and other interested parties. We also obtained information from seven southeastern states about SDWA implementation in those states. We conducted an open-ended, non-quantitative telephone survey. At a minimum, we spoke with each state's drinking water program director or manager. We also reviewed written documentation from the states. In addition, we obtained the perspective of Environmental Protection Agency officials.

The primary criteria we used to measure program implementation were the federal Safe Drinking Water Act and associated regulations. We also used South Carolina laws and regulations relating to the drinking water program, including appropriation act provisos governing the collection and use of drinking water fees. We also used GAO reports and a report from Clemson University about drinking water issues.

We reviewed DHEC's management controls for the fees collected from water authorities and for enforcement of the drinking water program's requirements. We also reviewed controls used to monitor contracts and ensure the effective use of state funds.

We did not review the reliability of computer-generated data provided by DHEC. In most cases, we did not rely on this data to meet our audit objectives. Also, when DHEC's computer-generated data was viewed in context with other available evidence, we believe the opinions, conclusions and recommendations in this report are valid.

FY 93-94 Drinking Water Fee Schedule

FY 93-94 Appropriation Act

31.26. (Safe Drinking Water) In order to comply with the provisions of the federal Safe Drinking Water Act, the department is authorized to collect a fee from each public drinking water system. The fee must be based upon the number of service connections or the number of taps or meters through which the system provides water to its customers. The fees collected must be returned to the department for the purposes of implementing the Safe Drinking Water Act Regulatory Program including engineering plan review, compliance inspections, and enforcement; and for providing technical assistance and monitoring and laboratory analytical services for the public water systems of the State.

System Size # Service Connections	System Fee
2–14 (Serve fewer than 25 customers.)	$150
2–14 (Serve 25 or more customers.)	$500
15–50	$800
51–100	$1,500
101–500	$4,000
501–1,000	$8,000
1,001–5,000	$15,000
5,001–10,000	$18,000
10,001–25,000	$20,000
25,001–50,000	$30,000
50,001–up	$40,000

In providing monitoring and laboratory analytical services, DHEC will consider least cost alternatives including contracting with private laboratories when appropriate. DHEC shall include all applicable direct and indirect costs in developing cost comparisons with private laboratories.

FY 94-95 Drinking Water Fee Schedule

FY 94-95 Appropriation Act

30.23. (DHEC: Safe Drinking Water Act) In order to comply with the provisions of the federal Safe Drinking Water Act, the Department is authorized to collect a fee from each public water system. The fee must be based upon the number of taps through which the system provides water to its customers. The fees collected must be returned to the department for the purposes of implementing the Safe Drinking Water Act Regulatory Program including engineering plan review, compliance inspections, and enforcement; and for providing technical assistance and monitoring and laboratory analytical services for the public water systems of the State. The fee shall be as follows:

COMMUNITY AND NON-TRANSIENT NON-COMMUNITY WATER SYSTEMS

Fee = Program Administration Component + Distribution Monitoring Component + Source Monitoring Component

Fee = $12.00 x (# Taps Up To 10) + $8.00 x (# Taps From 11 To 25) + $6.40 x (# Taps From 26 To 50) + $4.80 x (# Taps From 51 To 100) + $3.20 x (# Taps From 101 To 500) + $2.40 x (# Taps From 501 To 1,000) + $1.60 x (# Taps From 1,001 To 5,000) + $1.20 x (# Taps From 5,001 To 10,000) + $0.75 x (# Taps From 10,001 To 15,000) + $0.40 x (# Taps From 15,001 To 25,000) + $0.25 x (# Taps From 25,001 To 50,000) + $0.15 x (# Taps From 50,001 To 100,000) + $0.10 x (# Taps Greater Than 100,000)

+ $175 (Systems Serving Up To 100 Taps); Or, $500 (Systems Serving 101 To 1,000 Taps); Or, $2,500 (Systems Serving 1,001 To 15,000 Taps); Or, $5,000 (Systems Serving Greater Than 15,000 Taps)

+ [($250 x (# GW Sources)) + ($500 x (# SW Sources))] [Up To 25 Taps]; Or, [($400 x (# GW Sources)) + ($800 x (# SW Sources))] [From 26 To 100 Taps]; Or, [($1,000 x (# GW Sources)) + ($2,000 x (# SW Sources))] [Greater Than 100 Taps]; Or, [Maximum $5,000]

SYSTEM SIZE (NUMBER OF TAPS)			PROGRAM ADMINISTRATION (BASE AMOUNT + RATE PER TAP)		
			BASE	RATE PER TAP	
1	To	10	$0	$12.00	First 10 Taps
11	To	25	$120	$8.00	Taps 11 To 25
26	To	50	$240	$6.40	Taps 26 To 50
51	To	100	$400	$4.80	Taps 51 To 100
101	To	500	$640	$3.20	Taps 101 To 500
501	To	1,000	$1,920	$2.40	Taps 501 To 1,000
1,001	To	5,000	$3,120	$1.60	Taps 1,001 To 5,000
5,001	To	10,000	$9,520	$1.20	Taps 5,001 To 10,000
10,001	To	15,000	$15,520	$0.75	Taps 10,001 To 15,000
15,001	To	25,000	$19,270	$0.40	Taps 15,001 To 25,000
25,001	To	50,000	$23,270	$0.25	Taps 25,001 To 50,000
50,001	To	100,000	$29,520	$0.15	Taps 50,001 To 100,000
100,001	And Above		$37,020	$0.10	Over 100,000

SYSTEM SIZE (NO.OF TAPS)			DISTRIBUTION MONITORING (FIXED RATE)	SOURCE MONITORING (RATE PER SOURCE)	
				GROUNDWATER	SURFACE WATER
1	To	10	$175	$250	$500
11	To	25	$175	$250	$500
26	To	50	$175	$400	$800
51	To	100	$175	$400	$800
101	To	500	$500	$1,000	$2,000
501	To	1,000	$500	$1,000	$2,000
1,001	To	5,000	$2,500	$1,000	$2,000
5,001	To	10,000	$2,500	$1,000	$2,000
10,001	To	15,000	$2,500	$1,000	$2,000
15,001	To	25,000	$5,000	$1,000	$2,000
25,001	To	50,000	$5,000	$1,000	$2,000
50,001	To	100,000	$5,000	$1,000	$2,000
100,001	And Above		$5,000	$1,000	$2,000

OTHER PUBLIC WATER SYSTEMS

Transient Non-Community Systems: Fee = $250
Systems Serving More Than 1 Tap But Less Than 15 Taps and Serving Less Than 25 People: Fee = $150
Systems Serving 1 Tap and Serving Less Than 25 People: Fee = $100
Vending Machines: Fee = $ 50

For the purposes of this fee schedule, tap is defined as a service connection, the point at which water is delivered to the consumer (building, dwelling, commercial establishment, camping space, industry, etc.) from a distribution system, whether metered or not and regardless of whether there is a user charge for consumption of the water.

Agency Comments

South Carolina
DHEC
Department of Health and Environmental Control
2600 Bull Street, Columbia, SC 29201

December 13, 1994

Mr. George L. Schroeder
Director
Legislative Audit Council
400 Gervais Street
Columbia, SC 29201

Dear Mr. Schroeder:

Thank you for the opportunity to provide comments on your final report for the audit of the Department of Health and Environmental Control's implementation of the Safe Drinking Water Act. We have reviewed your report and provided comments on differences in fact and conclusions that were reached. Also included are affadavits from all department staff who have reviewed your report.

We appreciate the cooperation extended by members of your staff in conducting this audit. Please advise should have any questions or need additional information.

Sincerely,

R. Lewis Shaw, P.E.
Deputy Commissioner
Environmental Quality Control

cc: Doug Bryant

Response of Department of Health & Environmental Control

Legislative Audit Council Report

Implementation of the Safe Drinking Water Act

December 13, 1994

Executive Summary

Policy Issues

(1) Page v, paragraph 1. DHEC does not concur with the Legislative Audit Council's concern that "subsidizing small water systems is not in the long term interest of optimizing the use and management of its water resources". The decision made by South Carolina was to determine the most effective way for the state's drinking water industry and DHEC to meet the increasing mandates of the Federal Safe Drinking Water Act. This decision established a user fee program which does provide subsidies for small and medium water systems; however, more serious financial inequities would have occurred among the populace served by the various sizes of water systems if each system had to undertake the costs of these mandates alone. The state's decision has strengthened the ability of the public and private sectors to work together to address today's complex issues of providing safe drinking water to the citizens of our state. This decision has also prevented a major problem of noncompliance with federal requirements which would have exacerbated the financial impacts of the federal mandates through significant noncompliance penalties (up to $25,000 per day of violation).

(2) Page v, paragraph 4. DHEC disagrees with the statement that "the fees proposed by DHEC and passed by the General Assembly contain subsidies for certain water systems". DHEC's only proposal (Bill H.3335) was not passed by the General Assembly. All other fee proposals to the General Assembly have been presented by groups comprised of representatives from small, medium, and large systems, and DHEC. See additional comments concerning the fee schedule on page 6 of this response.

Administrative Issues

(1) Page vi. DHEC strongly denies that it has not complied with the FY 93-94 Appropriations Act requiring that it consider least-cost alternatives when providing monitoring services. See specific comments on pages 6-8 of this response.

(2) Page vi. DHEC disagrees with the conclusion that it has not pursued enforcement action against many water systems with unpaid FY 93-94 fees. See specific comments on pages 8-9 of this response.

Chapter 2, Policy Issues

Viability of Water Systems

(1) Page 6-8. While DHEC does not dispute the finding that the state does not have an adequate viability program in place, it should be recognized that viability is an emerging issue. Most of the state's public water systems have existed for many years and viability did not become an issue until significant new federal mandates were imposed upon water systems beginning in July 1991. As the significance of the impacts of the 1986 Safe Drinking Water Act Amendments (SDWAA) became clear through the promulgation of more and more federal regulations, viability has become an important consideration. DHEC had no authority to consider viability until the legislature passed the FY 93-94 fee schedule as part of the FY 94 Appropriations Act. DHEC is currently developing regulations for viability following the requirements of the Administrative Procedures Act.

(2) Page 7, paragraph 4. This paragraph seems to be used as example of how DHEC is not preventing the development of new, small systems that are likely not to be viable. This general conclusion cannot be drawn from looking at a "snapshot" of what happens to the inventory of public water systems. The inventory is very dynamic and changes occur for different reasons. The 173 new systems added to DHEC's inventory between July 1993 and February 1994 occurred for several reasons. 67 of these systems serve migrant labor camps which are regulated by the South Carolina Employment Security Commission and were added to DHEC's inventory as a cooperative effort to ensure safe drinking water for these facilities. There are no alternative water sources for these facilities. Another 34 of these systems are food service establishments such as convenience stores and other retail establishments located in rural areas where no other public water is available. These were added to DHEC's inventory as a result of special emphasis to locate such facilities.

(3) Page 8, paragraph 4. DHEC strongly disagrees with the conclusion that it has not promoted water system consolidation. DHEC has no statutory authority to require public water systems to provide water service to specific areas nor to regulate the necessity of specific private drinking water wells. On numerous occasions DHEC has made recommendations for smaller systems to consolidate with larger systems, but could not force the issue.

Many factors influence decisions to develop new water systems or to construct private wells in lieu of consolidating with existing systems. One of the most important factors involves the costs of providing public water to a specific area. Some large water systems charge much higher water rates for customers outside

of their jurisdictional boundaries. A typical 1994 rate schedule for one the state's larger systems shows that water rates for customers outside the city limits are 1.5 to 2.8 times more than the rates for customers inside the city limits. This practice encourages development of new systems and proliferation of private wells.

Another cost factor arises because policies of many large water systems will not allow service to be provided to an area unless distribution and service lines comply with the water system's design requirements of their long range expansion plans. This type of policy usually results in the installation of much larger lines than are necessary to provide the service needed, much higher costs, and the inability of the residents in the proposed new area to pay for such service. A typical example of how such policy discourages consolidation and resolution of problems involves a community which has approximately 100 individual residences and a small children's day care facility. The homes are all served by private wells (unregulated). The day care facility is a regulated public water system but also uses a well as its source. Ground water contamination from some unknown source began to appear in private wells. After extensive investigation by DHEC, it was discovered that 9 private wells had contamination above acceptable drinking water standards and another 15 wells had lower levels of contamination. Many alternatives were evaluated and discussed between DHEC and community representatives including the most preferred option of tying this community onto the nearby municipal system. When this alternative was pursued, the only proposal acceptable to the city was to provide 12 inch service lines to the community at a projected cost of $0.5 million which a community of this size could not afford. All parties involved tried to find a source of funding for this project but was unable to do so. As time went on and the problem did not improve (temporary filters bought with federal Superfund money were provided for homes where drinking water exceeded acceptable standards), city water was eventually provided for a portion of the community through the construction of 8 inch service lines at a cost of $160,000 that was partially funded through grant funds from the Governor's office and tap fees from customers who were provided service. Another recent example involves a Home for Boys which has its own water system. Total occupancy of the home including staff is less than 25 which classifies it as a state system only. The home was experiencing minor water quality problems and financial difficulty in just paying the fee for minimum DHEC services and sought to connect to the nearby city system. The city responded that it's policy for extension of water lines outside the city was to require the customer to pay for materials and the city would provide for the installation. The city's response also included a cost estimate for materials of approximately $250,000. Needless to say, these costs far exceeded the financial capacity of the boys' home. These examples do not represent isolated cases, but are typical of routine situations which occur when small systems attempt to

evaluate the feasibility of consolidation.

Many new water systems develop because there are no institutional controls governing real estate development. Many housing developments (e.g trailer parks, subdivisions) begin with only one or two which are not regulated by DHEC and usually "grow" into being regulated as public water systems. The ownership of the water system usually becomes a legal problem in such cases. DHEC and EPA have experienced significant difficulties in taking appropriate enforcement action against systems of this nature. For small water systems that are regulated by DHEC, consolidation is encouraged during the permitting process by requiring proposed new systems to provide information on nearby existing systems which might be available to provide service.

Another important factor affecting consolidation in many areas is a local regulation or requirement that areas to be served must be annexed into the local government's jurisdiction. Decisions on annexation are extremely complex and involve many more issues than providing water service.

These are just a few of the factors affecting consolidation; however, each of them presents a significant barrier to an effective policy to promote consolidation of water systems. DHEC has no authority to approve/disapprove or be involved in the development of local policies affecting the costs of providing water services nor geographical areas to be served. Therefore, DHEC can exert little control or influence over them.

Fee Schedule

(1) Pages 9-11. The discussion concerning DHEC's proposal of a monthly fee of $0.50 per service connection is technically incorrect. Bill H.3335 which was introduced at DHEC's request established a user fee of a "up to $0.50 per month" per service connection and included a minimum annual fee of $100 for systems with less than 15 service connections, a minimum annual fee of $500 for systems with greater than 15 service connections, and a maximum annual fee of $150,000 for any system. Table 2.2 comparing the various fee schedules is also incorrect in that no system would pay more then $150,000 under $0.50/tap/month proposal. Bill H.3335 also provided for the use of "residential equivalents" for industrial, commercial, or master-metered systems that serve non-residential units. Bill H.3335 also provided that water systems could recover the cost of the fee from its customers without a rate hearing. DHEC believed this to be the most equitable way to meet the costs of the new federal requirements since the annual costs each customer would pay would be similar whether they lived in a small town or a large metropolitan area.

Subsidies in FY 94-95 Fee Schedule

(1) Pages 10-12. DHEC and other supporters of the FY 94-95 fee schedule recognize that subsidies exist. However, DHEC and others feel that these subsidies are necessary for the continued viability of existing small and medium water systems. DHEC does not agree with the conclusion that removing the source water subsidies and charging a flat source rate fee would be revenue-neutral. It would also have a more significant impact by shifting costs among various systems and could seriously jeopardize the viability of systems like Cassatt Water Company and CWS/I-20 as shown in Table 2.4. The consequences of changing this part of the fee schedule cannot be determined without recalculating the total fee schedule for all systems and comparing costs from system to system with existing fee schedule.

Chapter 3, Administrative Issues

Water Monitoring

(1) Pages 19-21. DHEC disagrees with the conclusion that it did not use cost comparisons to decide whether to use the state laboratory or contract with private laboratories for the monitoring. DHEC also strongly denies that it did not comply with the FY 93-94 Appropriations Act requiring it to consider least-cost alternatives including contracting with private laboratories when appropriate in providing monitoring and analytical services.

(a) From the time it became clear in mid-1991 that the SDWAA of 1986 were going to have significant impacts upon the state's water industry and the department alike, DHEC began an attempt to build a consensus on how to deal with the issues involved. The financial impact of the new federal monitoring requirements alone was staggering. After failing to reach a consensus with the affected parties, DHEC believed that the issue should be resolved by the legislature because of its significant financial impact. DHEC's recommendation to the legislature was Bill H.3335 which proposed a user fee. In sponsoring this legislation DHEC provided each member of the General Assembly a fact sheet summarizing the impacts of the increase in federal requirements, the total additional resources DHEC would need to retain primacy and provide monitoring services to all water systems, and the average costs for laboratory analyses if provided by commercial laboratories. DHEC also provided each legislator with a comparison of DHEC's costs versus average costs by commercial laboratories for water systems in his district. These materials showed that the total increased annual costs for DHEC to maintain primacy and provide monitoring services would be

approximately $5 million. Further breakdown of these costs were $2.5 million for maintaining primacy (program administration) and $2.5 million for monitoring services. Assuming only 1 source of water for each system, the total annual costs to the public water systems of the state for commercial laboratory analyses alone (no sample collection) would have been more than $8 million (1880 sources x $3,420/sample x 4 samples/source/3 years = $8.6 million). While this information was provided in support of Bill H.3335 which did not pass, the same financial information was used as the basis for the FY 93-94 fee schedule that was eventually adopted by the General Assembly. DHEC, therefore, feels strongly that the appropriate body (General Assembly) did compare costs in making the decision to establish a fee program to pay the costs "of the Safe Drinking Water Act Program including engineering plan review, compliance inspections, and enforcement; and for providing technical assistance and monitoring and laboratory analytical services for the public water systems of the state" (See Section 31.26 of the FY 93-94 Appropriations Act.

(b) The General Assembly further provided that DHEC "consider least cost alternatives including contracting with private laboratories when appropriate". DHEC has considered other alternatives and is contracting with private laboratories where appropriate. DHEC <u>does not concur</u> with the conclusion of the Legislative Audit Council that this provision in the law requires DHEC to use only a comparison of unit costs in deciding whether to contract with private laboratories. Deciding on the least cost alternative is complex and can involve many factors including the following:

* the requirement for the state to maintain a certified laboratory;
* the instability of federal monitoring requirements;
* indecisiveness in federal methodology approval;
* the capacity of the lab to provide specific analyses;
* the availability of certified labs;
* the level of quality assurance provided in producing the results;
* the laboratory analytical method required;
* the number of contaminants each method includes;
* the workload of samples that have to be collected and analyzed and the associated compliance schedule for completion;
* the stability or instability of the workload (i.e. peaks and valleys);
* the significance of reductions in monitoring that occur over the long term; and
* the uncertainty of pending changes in the Federal Safe Drinking Water Act.

Unit costs quoted by private labs for various parameters vary from lab to lab depending on its size and capacity among other factors. Most labs also offer reduced prices for high quantities of the same analyses.

In order to be as cost effective as possible, DHEC believes that it must look at the long range costs in deciding whether to use the state lab or contract with private labs. For example, DHEC was faced with the decision on monitoring for lead and copper. This monitoring required that 26,890 samples had to be analyzed in a 12-month time frame (to meet federal deadlines). The peak monitoring workload would reduce to less than 8,000 samples annually in 2 years. At that time the lowest advertized unit costs (with quantity discount) from private labs for these analyses was $30 per sample and DHEC's cost was under $15. Using only this comparison DHEC should have conducted all the sampling. However, when DHEC considered the other factors listed above (particularly the need to purchase 8 additional Atomic Absorption units @ $75,000 each), it decided that the least cost alternative was use of contract labs to complete the lead & copper monitoring during periods of peak workloads and to use the state lab after monitoring reductions occur. This decision allowed federal compliance dates to be met, avoided significant federal penalties which may have been imposed by EPA for noncompliance, avoided the purchase of lab equipment that would not have been needed after the peak monitoring periods and, hence, was more cost effective in the long term.

Recommendations

(1) Page 21. DHEC agrees that unit costs should be considered, but strongly disagrees that the law establishes this as the sole basis for deciding when to contract with private laboratories.

Fee Administration

(1) Page 22-23. DHEC disagrees with the conclusion that it has not pursued adequate enforcement action against systems that have not paid FY 93-94 fees. While we are not disputing the specific numbers used in paragraphs 2-4, the process for determining which system and when a system becomes delinquent has been very dynamic. There seems to be some misunderstanding of this process by the auditors. A succinct explanation of this process and the present status for delinquent systems follows below.

Prior to problems with collecting the Drinking Water fees, there was no formal policy or procedures for addressing this issue. Normal business procedures were being used in collecting fees for

other programs within the Office of Environmental Quality Control and no significant problems of collection were occurring. This is probably attributable to the fact that most other fees were relatively small.

When it became clear that collection of the FY 93-94 Drinking Water Fees would present a problem, DHEC recognized that written procedures were necessary for both the billing process and follow up enforcement actions that would be needed. The new billing procedures that were established calls for delinquent notices to be sent at 30, 60, and 90 days for invoices that are not paid within 30 days of receipt. During this time frame, personal contact by telephone is also attempted. If full payment or a schedule for payment has not been approved within this 120 day period, nonpayers are referred for enforcement action.

For FY 93-94, DHEC billed 2,808 systems for a total of $4.28 million. As of November 1994 DHEC has collected $3.94 million from 2,497 systems. 163 systems are no longer classified as public water systems and have been deleted from the initial billing inventory of 2,808 resulting in approximate reduction of $146,920 in anticipated revenues. Of 236 systems remaining that have made no payment or are delinquent on their payment schedule, 162 have been referred for enforcement. $323,500 was owed by these 162 systems referred and subsequent enforcement actions have resulted in payment of $171,119. The outstanding balance ($152,381) still owed represents less than 3.75% of the total dollars billed. Determinations for 74 systems are pending because of a lack of documentation concerning changes in ownership, systems going out of business, incorrect classification of systems, changes in addresses of owners, changes in telephone numbers, etc. The amount of dollars originally billed for these systems was only $23,100 and will likely decrease based upon final determinations.

Classification of Water Systems

(1) Page 24. DHEC agrees that some systems have been incorrectly classified and, therefore, not billed correctly. DHEC denies that systems are not rebilled when correct classifications are determined. Water systems are billed based upon their classification at the time invoices are generated. As mentioned before, classification of systems is dynamic and changes may occur throughout any one year. DHEC spends as much effort as possible to ensure that classifications are correct prior to the generation of invoices and rebills systems upon obtaining proper documentation that their classification has changed.

This report was published for a total cost of $720.58; 330 bound copies were printed at a cost of $2.18 per unit.